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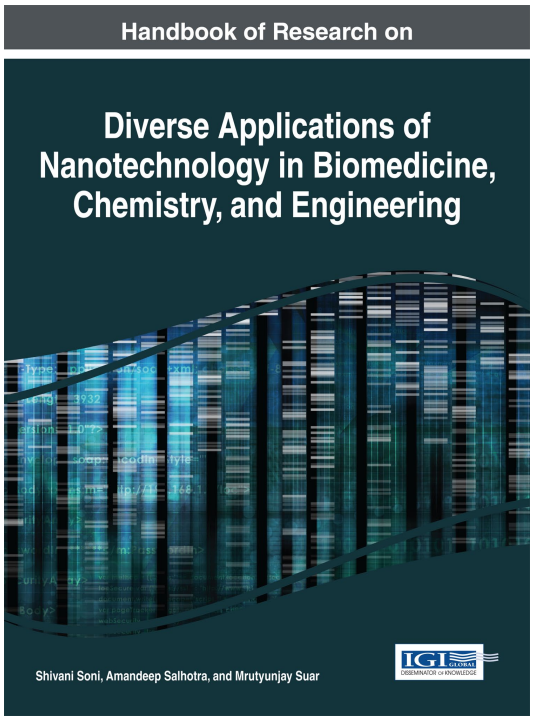

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Handbook of Research on Diverse Applications of Nanotechnology in Biomedicine, Chemistry,and Engineering

Part of the Advances in Chemical and Materials Engineering Book Series

Shivani Soni (Alabama State University, USA),
Amandeep Salhotra (City of Hope National Medical Center, USA),
and Mrutyunjay Suar (KIIT University, India)

As a paradigm for the future, micro-scale technology seeks to fuse revolutionary concepts in science and engineering and then translate it into reality. Nanotechnology is an interdisciplinary field that aims to connect what is seen with the naked eye and what is unseen on the molecular level.

The **Handbook of Research on Diverse Applications of Nanotechnology in Biomedicine, Chemistry, and Engineering** examines the strengths and future potential of micro-scale technologies in a variety of industries. Highlighting the benefits, shortcomings, and emerging perspectives in the application of nano-scale technologies, this book is a comprehensive reference source for synthetic chemists, engineers, graduate students, and researchers with an interest in the multidisciplinary applications, as well as the ongoing research in the field.

Topics Covered:

- Nanogenomics
- Nanomechanics
- Nanomedicine
- Nanotoxicology
- Regenerative Medicine
- System Biology
- Tissue Engineering

Market: This premier publication is essential for all academic and research library reference collections. It is a crucial tool for academicians, researchers, and practitioners. Ideal for classroom use.

Shivani Soni joined as an assistant professor in Department of Biological sciences in April 2010. Dr. Soni obtained her Bachelor's and Master's degrees in Zoology from University of Delhi, India. She received her postdoctoral training with Dr. Manjit Hanspal at Tufts School of Medicine, Boston, Massachusetts. Later, she joined as a senior postdoctoral fellow in Dr. Shiladitya Sengupta's lab at Health Science and Technology division of Harvard Medical School-MIT, Boston, Massachusetts. Her research interests are in the area of Hematology and Oncology. Her research has focused in the field of erythropoesis (red blood cell formation), where she demonstrated the role of a novel protein Emp (Erythroblast Macrophage Protein) in red blood cells and macrophage development. Emp was discovered by Dr. Hanspal in 1994, and Dr. Soni was the first one to characterize its function in vivo in 2006. This has resulted in multiple high impact publications and a prestigious travel award from American Society of Hematology. Additionally, she had also explored events preceding the release of malarial parasite from RBCs as an extension of her PhD work. Her current research focuses on developing strategies that can be applied into clinico-pathological conditions related to abnormal erythropoiesis, cell-to-cell adhesion and migration. Another part of her research in the area of Oncology involves engineering concepts pertaining to biological systems. In collaboration, she has developed several novel polymeric hybrid nanoformulations for cancer chemotherapy and targeting aberrant signal transduction pathways, which has led to many publications in peer reviewed journals as well as patents. Dr. Soni is the reviewer of many journals related to Hematology, Oncology, and Biochemistry. She received her PhD degree from University of Delhi in Molecular Parasitology, focusing on development of drug resistance in malarial parasites and their transmission. Her lab is a platform for inculcating basic research aptitude in undergraduate and graduate students of minority background.

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